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Westover Regional Aviation Center

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EXECUTIVE SUMMARY of the report on Potential Joint Use of Westover Air Force Base for Civil Aviation. Prepared by Simat, Helliesen & Eichner, Inc. October 1976.

Executive Office of Administration and Finance

Acknowledgements

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Additional copies of the Executive Summary and of the complete report are available from the office of the Westover Metropolitan Development Corporation, Westover Industrial Airpark, Chicopee MA 01022 (413-593-6421); and from the Massachusetts Government Land Bank, 1 Ashburton Place, Room 2109, Boston MA 02108 (617-727-8257).

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Introduction

In April 1973 the Defense Department announced the partial deactivation of Westover Air Force Base, located near Springfield, Massachusetts. Some 2,300 acres of a total 4,800 acres were declared surplus, and during the past three and one-half years a vigorous planning program to convert the surplus property to active civilian use has been established.

One of the opportunities presented by the military decision relates to development of civilian aviation activity. The Westover Regional Aviation Center is a response to that opportunity. It sets forth an analysis of the potential demand for civilian aviation services at Westover. It highlights the major considerations present in developing such a regional facility and articulates the key elements of a development plan, including its impact on land absorption in the areas of Westover set aside for airpark development.

This report has been prepared for the Westover Metropolitan Development Corporation (WMDC) and was sponsored by the Massachusetts Aeronautics Commission and the Massachusetts Joint Commission on Federal Base Conversion with financial assistance from the Federal Aviation Administration and from the New England Regional Commission through a grant to the Commonwealth of Massachusetts, Office of the Governor.

In creating the Westover Metropolitan Development Corporation, the Massachusetts General Court empowered it to "...aid private enterprise in the...conversion and redevelopment of lands...to industrial, commercial or manufacturing uses...and to aid private enterprise fully to utilize opportunities to alleviate unemployment." From the start the WMDC and other state agencies assisting it have had as their focus the redevelopment of Westover for new jobs and other economic benefits to the region.

View of Westover looking northwest from a point above the Mass. Turnpike. Holyoke appears on the far bank of the Connecticut River at the upper left. The long runway (5-23) at Westover appears in the mid-foreground, with the Regional Aviation Center near the middle of the picture.

Background

A series of previous studies prepared for the City of Chicopee/ Town of Ludlow's Westover Task Force and the Westover Metropolitan Development Corporation have examined various issues related to the reuse of surplused portions of Westover. These include:

- Report of Economic Adjustment Program[1/]
- Plan for Civilian Reuse of Surplus Property at Westover[2/]
- Master Plan for Westover Industrial Park[3/]

While all of these studies have alluded in a general way to the possibility of civilian aviation uses at Westover, none has undertaken a comprehensive assessment of particular aviation needs in the region. Consequently, any pro forma elements contained therein concerning aviation activity at Westover should be adjusted where necessary to reflect the conclusions and recommendations of the present study.

This study also incorporates a review of other planning efforts affecting aviation in the Westover area, most particularly the following:

- Massachusetts Airport System Plan[4/]
- Westfield-Barnes Municipal Airport Master Plan[5/]
- Airport Facilities Plan for the State of Connecticut[6/]
- Bradley Airport Master Plan[7/]
- Bradley International Airport Boarding Passenger Survey[8/]
- Draft Logan Airport Master Plan[9/]
- New England Service Investigation[10/]

1/ Office of Economic Adjustment, Department of Defense, August 1974.

2/ Wolf and Company, New York, May 1974.

3/ C. E. Maguire, Inc., New Britain, Connecticut, April 1976.

4/ Arthur D. Little, Inc., Cambridge, Massachusetts, December 1973.

5/ Conlon Assoc., Inc., and United Aircraft Research Laboratory, December 1972.

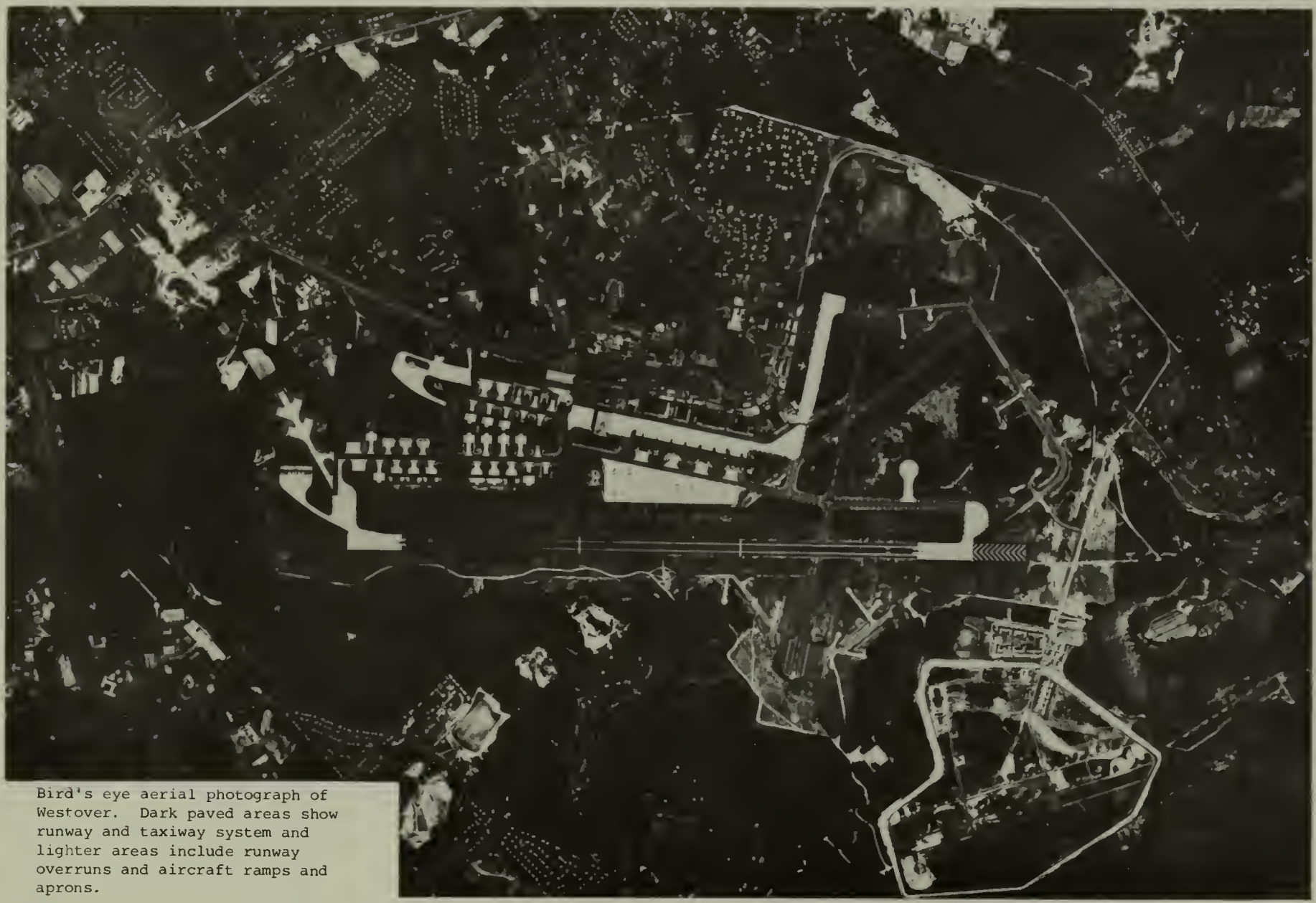
6/ Frederic R. Harris Associates, Stamford, Connecticut, April 1969.

7/ Landrum and Brown, Cincinnati, Ohio, September 1969.

8/ Purcell-DeLeuw, Cather.

9/ Massport Master Plan Study Team, September 1975.

10/ Civil Aeronautics Board, Docket 22973, July 1972.



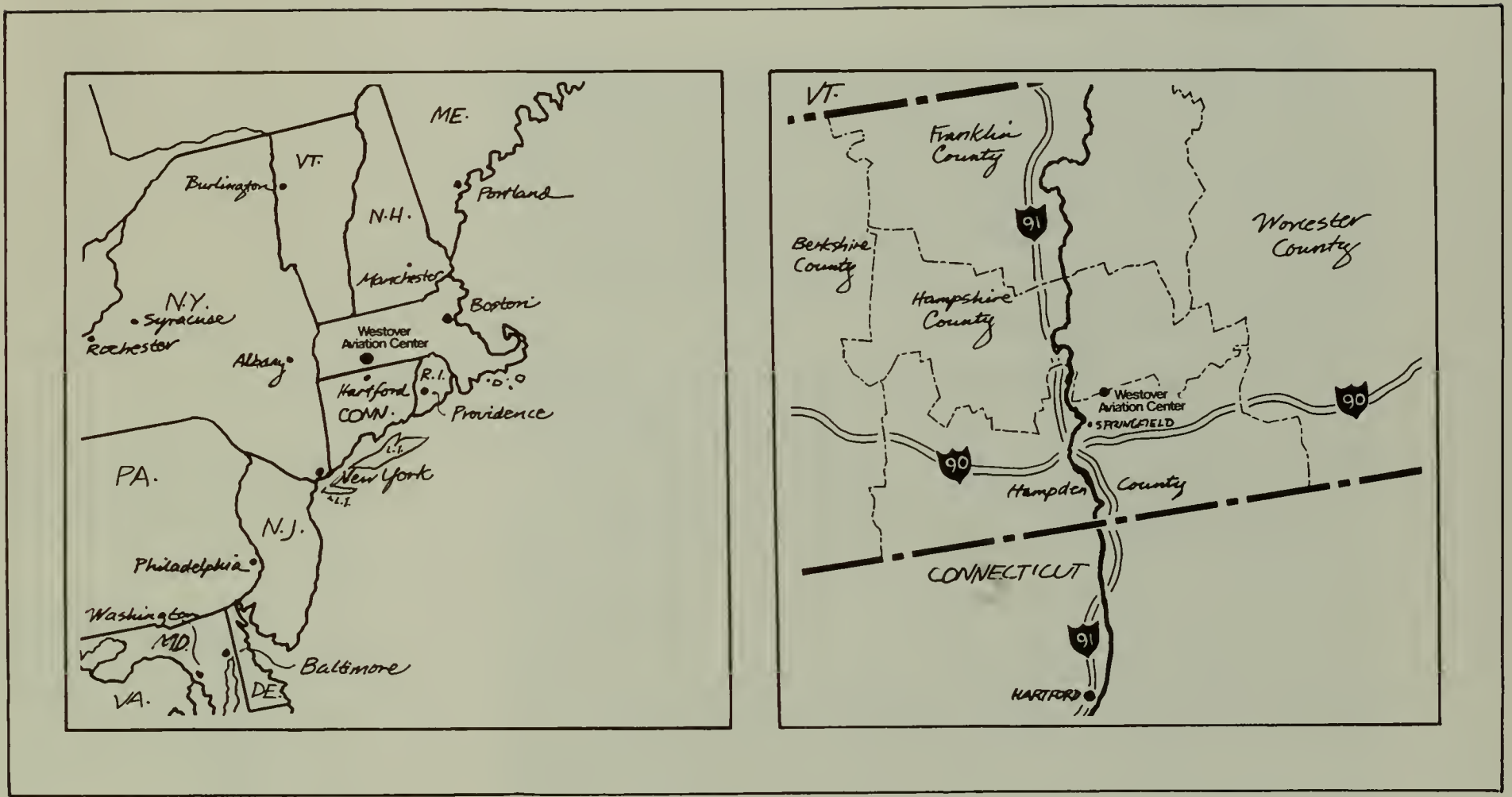
Bird's eye aerial photograph of Westover. Dark paved areas show runway and taxiway system and lighter areas include runway overruns and aircraft ramps and aprons.

Note to the Reader

This document is an executive summary intended to highlight the most important results of a research effort that has extended well over a year and has involved many persons. This summary collects and organizes those results in a way intended to aid the busy reader in overviewing the prospects-- as they are understood so far-- of successfully creating a regional aviation center as an economic development project at Westover.

For further background, sources, tabulations and analyses underlying this summary the reader is directed to the full report entitled "Potential Joint Use of Westover Air Force Base for Civil Aviation".

One additional reminder is in order. The consultant cannot, of course, decide whether the project discussed herein should be undertaken. It is our role, rather, to provide those entrusted with the responsibility for such decision with information and judgment. In our view a market is available for civilian use of the airport at Westover. We believe the prospects for creation of a successful aviation center there are good, especially if certain development considerations are borne in mind.



The Regional Context: Market Destinations and the Market Area. Medium- and Short-Haul air travel markets encompassed by the left-hand figure are candidates for direct Westover air service in the future. The right-hand figure depicts the Massachusetts counties of Berkshire, Franklin, Hampshire, Hampden and Worcester which constitute the prime local area which Westover will serve.

Market Potential

Introduction to the Market

A combination of favorable conditions distinguishes Westover for regional aviation development. In the first place, the availability of space and the magnitude of previous airfield investments offer a rare combination of attributes that few other communities in the country enjoy. Second, the location of the region with respect to population centers, transportation facilities and labor markets is excellent. And third, Westover appears to have the essential ingredients of community support, grass-roots initiative and careful planning that combine into a positive program for action.

In order to assess the demand for aviation services at Westover, we have defined a regional market area by examining travel patterns and the present availability of aviation services in the areas surrounding Westover. Excluding very small or private airports from consideration, Westover can draw upon a region west of Worcester all the way into the Berkshires, north into southern Vermont, and south to the Connecticut line.

Three major categories--and numerous additional subcategories--of aviation demand were considered by our study. These are (1) commercial passenger traffic, (2) air cargo and (3) general aviation activity. The first category of traffic involves the use of the major certificated carriers such as Delta and Allegheny as well as the smaller for-hire scheduled carriers such as the commuter air carriers (e.g., Pilgrim and Springfield Air Service). The major commercial airports currently serving demand for scheduled passenger services are Hartford's Bradley International, Boston, Albany and, to a minor extent, Worcester.

The second category involves air freight, mail and air express, known collectively as air cargo. The third category, general aviation, is a catch-all involving many disparate types of private and for-hire flying, usually, but not exclusively, accomplished with small planes, for purposes ranging from professional and business flying to pleasure, recreation and training activities and specialty flying such as crop dusting, aerial photography and the like.

ACTIVITY LEVELS AT SELECTED AIRPORTS NEAR WESTOVER

1975

Airport	Enplaned Passengers
Boston	4,850,000
Hartford	1,100,000
Albany	540,000
Worcester	19,000
Keene	9,000

	Enplaned Cargo (tons)
Boston	85,000
Hartford	22,000
Albany	3,400
Worcester	100
Keene	200

Survey

Since business-generated air traffic represents approximately half of total air carrier passenger demand and almost all of cargo demand, we developed a mail survey for distribution to manufacturers in an area encompassing Hampden, Hampshire, Franklin and Berkshire Counties and parts of Worcester County. In general, locations with faster access to either Windsor Locks or Worcester were excluded from the market area.

The survey was conducted by means of a questionnaire distributed to 215 firms selected from the 1974-75 Massachusetts Industrial Directory--a document compiled by the Massachusetts Department of Commerce and Development. This source identifies industrial and commercial firms by geographic location, type of business activity and employment.

Our survey covered employment of more than 64,000 people, representing about half of total manufacturing employment in the survey area. Useful responses were received from 76 of the firms surveyed (35%); and they accounted for over 26,000 employees representing over 20% of total manufacturing employment in the region.

Five principal areas of inquiry were covered by the questionnaire: the extent of individual employee travel, major passenger destinations, in- and outbound freight and cargo shipments, and the extent of air cargo operations.

The survey revealed that the pattern of trip destinations from the Westover market is similar to the pattern of destinations from Bradley. There were, however, important differences. Westover, for example, has a greater demand for service to New York City than to Washington, D. C., whereas the reverse is the case at Hartford. Such differences suggest the need for services more closely tailored to the preferences of the Westover region.

MAJOR MEDIUM- AND SHORT-HAUL ORIGINS AND DESTINATIONS AT BRADLEY

1974

Between Hartford and	Passengers In and Out
Washington	203,000
New York City	138,500
Philadelphia	108,200
Pittsburgh	77,800
Cleveland	68,000
Buffalo	54,000
Boston	45,500
Baltimore	41,600
Rochester	33,500
Syracuse	27,600

Passenger Demand

We estimate that passenger air traffic at Westover may total more than 650,000 enplanements per year by the end of the century if appropriate air service is made available there. We base this estimate on the following considerations:

- Currently about 900,000 enplanements are made yearly at Bradley, New York City, Albany and elsewhere by the people who live, work, and visit in the four westernmost counties of Massachusetts (Berkshire, Franklin, Hampden and Hampshire). One half, or 450,000, of these enplanements would logically occur within the four-county area if complete domestic and international air carrier service were available there. Since this is not the case, air travelers now use airport facilities elsewhere--primarily at Hartford in two-thirds of the cases and at New York City's airports in nearly one-fifth of them.

- Independent sources tell us that roughly 25%, or 300,000, of the passengers now using Hartford-Bradley originate in an area to which Westover is more accessible.

- National data on enplanements per capita suggest that air carrier demand in the market region is underdeveloped.

- Further evidence of traffic underdevelopment comes from contrasting statistics of enplanements per departure from Hartford-Bradley with comparable records from other airports located in similar markets. For example, Hartford enplanes 20%-35% more passengers per departure than does Indianapolis, a city with similar economic conditions; and this suggests to us that more convenient air service would attract many additional travelers who presently move by other modes of transportation.
- We believe that actual demand constitutes only about two-thirds of potential demand, and that potential demand for enplanements within the four-county market area presently runs as high as 690,000 per year.

COMPARISON OF AIR TRAVEL TIME TO NEW YORK CITY FOR WESTOVER MARKET TRAVELER (Minutes)

Ground Access Time and Airborne Time	Via Bradley	Via Westover
Ground Access		
Local	35	15
Waiting	10	10
Deplaning	10	10
Destination	10	10
Airborne	40	40
Total	105	85

COMMUTER AIR CARRIER OPERATORS
SERVING NEW ENGLAND

Air North, Inc.
Air-Speed, Inc.
Air Trans Airlines
Altair Airlines, Inc.
Bar Harbor Airlines
Command Airways, Inc.
Downeast Airlines, Inc.
Merrimack Aviation
New England Airlines, Inc.
New Aero, Inc.
Personal Air Transport
Pilgrim Aviation
Precision Valley Aviation
Provincetown-Boston Airline, Inc.
Springfield Air Service
Trans-New England Airlines
Winnipesaukee Aviation

ESTIMATED
PASSENGER ENPLANEMENTS
AT WESTOVER

	Carrier		
Year	Certificated	Commuter	Total
1980	0	8,300	8,300
1990	66,300	96,500	162,000
2000	187,000	465,000	652,000

- Assuming a slow economic recovery for the remainder of the 1970 decade followed by a round of vigorous growth, tapering toward the end of the century, the annual rate of growth in potential enplanements will range from 4.2% to 6.5% over the study period, resulting in potential enplanements within the market area in excess of one million by 1985 and nearly two million by 1995.

- The extent to which potential demand in the market area will be captured and served at Westover depends upon developments at both Hartford's airport and at Westover. Of particular importance at Westover are four factors: the vigor of the marketing effort made, the quality of aviation services provided, the support of the community and, in the long run, the ability to utilize Westover as an instrument of economic development. In our judgment Westover can conservatively capture 40,000 (or 3%) of the total potential enplanements in its market by 1985 and 650,000 (or 27%) of total potential demand by the year 2000.

Given the nature of air traffic in the Westover region (with over one-third of destinations within 500 miles and nearly two-thirds within 1,000 miles), the so-called commuter air carrier operators will service the bulk of travelers. These operators by law use aircraft with a 30-seat/7,500-lb. payload maximum and are proving to be very effective, especially in short-haul markets. In addition, they are free from economic regulation and have the encouragement of the Civil Aeronautics Board in the development of new markets.

Over the past five years passenger traffic by commuters has grown at an annual rate of 12.5% nationwide; and we anticipate that commuter enplanements will grow annually over a range from 10%-14% during the next twenty-five years. Thus, we estimate that by 1980 over 8,000 commuter enplanements will take place at Westover and by 1995 roughly 225,000 air travelers will be using commuter services there annually. For purposes of comparison,approximately 9,000 annual enplanements are presently handled at Keene and about 375,000 at Providence, R. I.

Air Cargo Demand

We estimate that in five years the volume of air cargo enplaned at Westover can approach current levels at Albany; that by 1990 air cargo activity at Westover may equal present traffic at Hartford; and that the tonnage enplaned at Westover could reach nearly 111,000 tons per year by the end of the century. These estimates are based on the following considerations:

- Our survey of manufacturers indicates that at the present time roughly 15,000 tons of air cargo are shipped outbound annually by manufacturing firms located in the four-county Westover market.

- Approximately half of this tonnage is currently air freighted through Hartford, with the remainder being trucked to Boston or to one of the New York City airports.

- Air cargo enplaned per departure at Bradley is higher than customary for an airport of its size. The tonnage per departure there approximates that experienced at Boston and indicates a vigorous demand within the Westover region.

- While the growth of air cargo shipments in New England has averaged nearly 12% per year over the last decade, we anticipate that the growth rate in the Westover region over the study period will range from 6.5% to 11%. Thus actual demand in the Westover market will hit 25,000 tons by 1990 and well over 100,000 tons by the year 2000.

- While all-cargo flights are on the increase generally, the industry is still dominated by combination passenger/cargo carriers. Due to this interdependence and the fact that certificated passenger carriage will take some time to develop, Westover's penetration of the air cargo market will be slow in the early years--15% by 1980--but may rise as high as 75% by the end of the century.

AIR CARGO ENPLANEMENTS AT SELECTED NEW ENGLAND CITIES (FY 1975)

Community	Tons
New York City	478,900
Boston	94,900
Hartford	21,500
Albany	3,400
Providence	4,000
Portland	1,300
Bangor	1,200
Burlington, Vt.	800

ESTIMATED CARGO TONNAGE ENPLANED AT WESTOVER

Year	Air Cargo Tonnage
1980	3,000
1985	11,000
1990	25,000
1995	63,000
2000	111,000

GENERAL AVIATION

We anticipate that general aviation activity at Westover will be very strong, approaching current levels at Bradley by 1980. By 1995, general aviation at Westover should match today's levels at the Commonwealth's two busiest general aviation airports--Bedford and Norwood--with nearly 250,000 annual operations. The two usual indices of general aviation activity are numbers of based aircraft and annual operations. They are discussed below.

At present over 300 general aviation aircraft are based at airports in the four-county Westover region; their numbers and the intensity of their utilization are growing at rates higher than the national average. We expect the growth in the Westover area to be 4% per year over the next quarter century, so that by the year 2000 about 900 such aircraft will be based there. Twenty percent of the region's total are presently based at Westfield. We estimate that Westover will come to be the home base for as much as 25%-30% of these aircraft, i.e., roughly 250 planes by the end of the study period, subject to possible military restrictions on small aircraft.

ESTIMATED GENERAL AVIATION ACTIVITY AT THE WESTOVER AVIATION CENTER

Year	Based Aircraft	Annual Operations
1980	50	53,000
1990	120	152,000
2000	270	372,000

In terms of operations (defined as either a take-off or a landing), general aviation aircraft now perform 325,000 annual operations at airports in the four-county region. We believe this activity will continue to grow at rates between 5.0% and 6.5%. Thus the market potential will approach 1.25 million operations yearly by 2000. We estimate Westover's share of this market will account for about 12% in 1980 and 25%-30% by the end of the century.

MILITARY

In general, military air operations in New England are expected to remain steady or possibly to decline over the next two decades. Between 1973 and 1974 such operations actually declined by nearly 20%. There were approximately 46,000 military operations at Westover in 1975. Whether this activity level will change in the near future depends largely upon a resolution of the issue of possible Air National Guard relocation from Westfield--a matter beyond the scope of the present study.

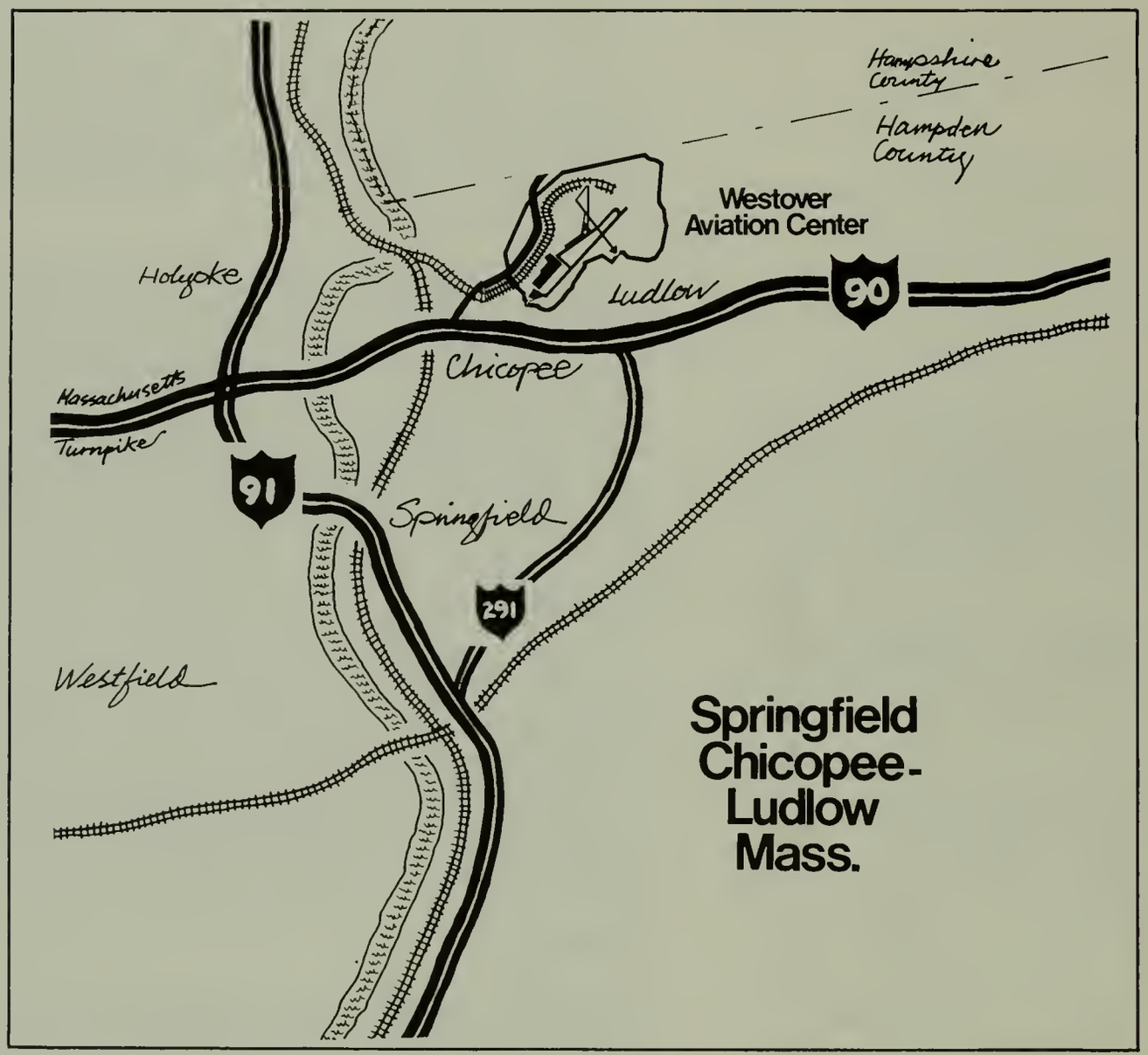
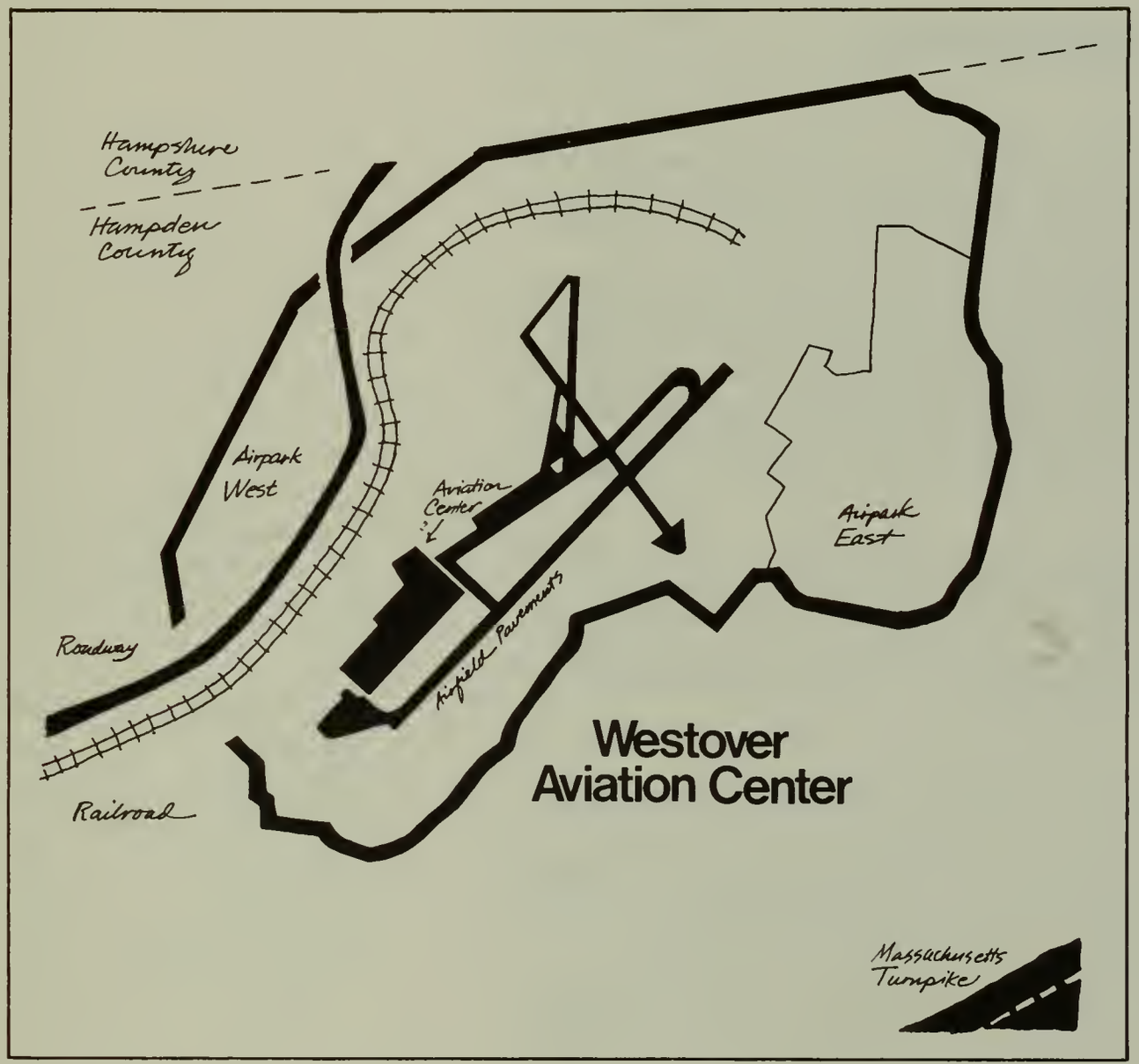


Illustration of the Westover Regional Aviation Center in the context of the Springfield-Chicopee-Ludlow-Holyoke SMSA, emphasizing, in particular, how the Airpark will offer maximum flexibility of access to all modes of transportation, allowing industry and commerce to accommodate changing transportation costs.



Schematic rendering of the Westover property shows the existing airfield pavements dominated by the 11,600' main runway (5-23) and the 7,050' crosswind runway (15-23). The Regional Aviation Center at the west side of the property encompasses 85 acres and includes 11 major buildings.

Development Considerations

Introduction

The demand for aviation services in the Hartford/Springfield region will grow substantially in the next quarter-century. However, present airports such as Bradley will not be able to meet the entire demand satisfactorily without major new expenditures for additional land and runway facilities. And the political reality is that significant expansion of these airfield facilities is very unlikely, particularly in the face of competing land use and vigorous community opposition. Only a few years ago, Hartford was seriously considering a massive and costly parallel runway to increase capacity. Today, the question is not when such an investment will be made, but if it will ever occur.

By contrast, the existing airfield facilities at Westover and the available acreage within airport boundaries establish Westover in a class by itself. Its present runway system can accommodate any aircraft now in service or likely to be built in the future, unlike many commercial airport where runway adequacy imposes severe constraints.

One major problem with the planning process during the past twenty-five years of airport development has been the failure to estimate the strength of continuing demand for air travel. Accordingly, too few airports built to yesterday's expectations are today adequate for their jobs. Westover, however, which was constructed for a major military role rather than as a civilian airport, has an available investment in acreage, runways, buildings and navigational aids which exceeds $100 million in historic costs. Its present investment could not be duplicated for two or three times that amount.

SIZE OF REPRESENTATIVE AIRPORTS

Airport	Acreage	Longest Runway (feet)
Westover	4,800	11,600
Hartford	2,400	9,500
New York-La Guardia	600	7,000
Albany	800	6,000
Philadelphia	3,100	7,000
Boston-Logan	2,400	10,100
Washington-National	650	6,900

A recent national study of aviation needs performed by the Aviation Advisory Commission pointed to the growing requirement for "...removal of short-haul...air traffic from large airports to suburban and military airports..." in order to make better use of valuable existing facilities. Westover is ideal for commercial aviation services because of its size but, more importantly, because of its location near a major interstate highway crossroads and its on-site rail and pipeline facilities.

We estimate that aviation services at Westover could generate from 100 to 200 new jobs within five years and that over a 25-year period some 1,000 new jobs might result directly from airport activities. For comparison, it is estimated that Bradley Airport currently supports in excess of 1,700 employees. The principal development considerations discussed below are the following:

- The role of Westover in the regional aviation system.
- The sequence of development of the aviation center.
- Restrictions imposed by joint civil/military use.
- Elements of the development plan.

The Role of Westover in the Regional Aviation System

Bradley Airport at Windsor Locks, designated as the certificated airport for Hartford/Springfield, serves the second largest New England metropolitan area after Boston, with a total population of 1.4 million. Both our survey and a Bradley passenger boarding survey show that more than one-fourth of the 1.1 million people who enplane at Bradley annually begin their trip in Massachusetts. Thousands more pass through Massachusetts from Vermont and New Hampshire to use Bradley, since it is the only certificated airport conveniently available to them at present.

Growing congestion at Bradley, combined with the unlikelihood of accomplishing new land acquisition and construction, necessary to provide additional airfield capacity, means an important opportunity for Westover to begin to build air services as a supplement to those at Bradley. These services should primarily be designed to attract Massachusetts residents and visitors. The results of these air services will include direct benefits to travelers as well as new job opportunities for area residents and stimulation to the industrial development of Pioneer Valley cities and towns.

The three major airports which will serve the two-state area--Windsor Locks-Bradley, Westfield-Barnes and Westover--should be viewed in a regional context with primary roles for each. Bradley will continue to be the major two-state regional airport for many years, with particular emphasis on long-haul flights (500 miles and longer). Westover should be developed to serve medium- and short-haul markets (less than 500 miles) and to accommodate business and general aviation aircraft capable of using its sophisticated navigational aids. Westfield-Barnes should be effectively used further to accommodate the rapidly growing demand for general aviation facilities in the region.

General aviation is the fastest growing segment of the industry measured by operations. With the possible diversion of this type of traffic from Bradley, as well as rapid normal growth in small-aircraft flying, it is realistic to expect general aviation operations on the order of well over one million per year by 2000.

A regional focus is important to the consideration of these high levels of potential traffic because it is one of the best ways to provide for the use of needed facilities without undue duplication. Previous planning studies of Westfield-Barnes estimated a requirement for new investment there ranging from $3.3 to 4.4 million in the 1972-1992 period to accommodate general aviation. An additional $12.1 million investment was estimated to be required there if air carrier service were to be conducted, although no recommendation to seek such service was actually made.

MAJOR LONG-HAUL
(500 MILES AND MORE)
ORIGINS AND DESTINATIONS AT BRADLEY
1974

Between Hartford and	Passengers In and Out
Chicago	230,100
Detroit	90,070
Miami	73,790
Fort Lauderdale	70,880
Los Angeles	70,870
Atlanta	69,490
Tampa	53,420
San Francisco	45,600
St. Louis	35,040
Orlando	38,910

In view of the superiority of Westover facilities and location compared with Westfield, it should be the policy of the Commonwealth to encourage major developments of scheduled air service at Westover in preference to Westfield. Every opportunity should be taken for Westover to serve regional air traffic that cannot be as conveniently accommodated at Bradley.

In general aviation is emphasized at Westfield, a better use of resources will result. Thus, a $12.1 million expenditure for prospective air carrier service at Westfield would be unwise; such investments would be better made at Westover. In addition, it is our view that some $4.7 million shown to be required for new capital investment at the Northampton and Palmer general aviation facilities (part of the Westover region) between 1972 and 1992 could be saved by encouraging use of Westfield for uninstrumented general aviation (visual flight rules or VFR) aircraft and use of Westover for fully instrumented (IFR) aircraft.

This is not to suggest the absence of investment requirements at Westover if it is to be fully developed over a 25-year period. The point is, however, that front-end investment requirements for Westover air services are modest because of the adequate infrastructure and the availability of recyclable buildings.

Further recognition of the need for a regionally coordinated approach to Westover development is found in a determination by the FAA several years ago that "...excess demand at Bradley may require civil use of Westover..." The agency has recommended establishment of a common air traffic control (ATC) facility to monitor Bradley, Westover and Westfield traffic to assure the safest possible airspace control for the region. At present, traffic control at Westover is the responsibility of the Air Force. A common ATC facility would be one of a number of important steps to regional aviation coordination that would assist in the successful development of Westover.

Sequence of Development of the Aviation Center

Although Westover offers unique facilities and has an excellent opportunity to combine aviation development and industrial development, there are also unique problems associated with any aviation activity. First, it takes time to generate interest among air carriers to serve a new point and, in the case of certificated carriers, requires enormous time and expense in the regulatory process before the Civil Aeronautics Board. Second, a minimum of three daily round trips is generally required between any two points served in order for the market to respond favorably. Third, the financial risks are high for most of the small operators likely to have enough entrepreneurial spirit to venture forth. Conversely, the stable established carriers are most likely to take a "wait and see" attitude before even considering entry into a new market.

Accordingly, a step-by-step program is desirable in which modest successes should be sought early in the development stage in the hope that these may be built into larger successes later on.

The first segments of aviation activity to be encouraged should include commuter carriers and business/professional general aviation. The airfield facilities already in place are more than adequate for this traffic and terminal requirements will be modest. In time, a network of points served via Westover can be built, first developing short- and medium-haul markets for which there is substantial demand. Short-haul cities which scored high in the Westover survey and on the Bradley origin-destination survey, such as New York and Boston (possibly including suburban airports such as White Plains and Bedford) should be considered as initial prospects.

A five- to ten-year incubation period will be required to establish Westover as a major satellite airport in the Hartford/Springfield metropolitan area. During this time the key markets for passenger/cargo operations should be developed and a favorable reputation for service established.

RECOMMENDED DEVELOPMENT PLAN FOR WESTOVER AVIATION SERVICES

	Period	Development
I	1976 to 1980/85	• Fixed Base Operator • Business and Professional General Aviation • Commuter Carrier • Cargo Operations • Supplemental Airline • Charter Flights
II	1980/85 to 1990/95	• Local Service Certificated Carrier • International Service
III	1990/95 Onward	• Trunkline

Later in the planning period, the introduction of long-haul and even international certificated carrier flights should be possible and will enable fully effective use of the airfield facilities.

Development should proceed along the following lines:

I The Initial Development Phase, extending from the present until some time between 1980 and 1985 should include efforts to:

- Attract one or more air taxi or commuter carriers to begin building a reliance on Westover for satellite passenger and cargo services between important markets.

- Establish one or more fixed base operators to accommodate sophisticated general aviation flying. The selection of such operators is crucial, because their reliability, vigor and initiative may have a "make-or-break" impact on the early stages of development.

- Develop "full-service" general aviation capabilities in avionics maintenance, sales and service areas consistent with military requirements for joint civil use.

- Encourage the use of Westover as a convenient alternative for general aviation and commuter users throughout Western Massachusetts and southern Vermont and New Hampshire.

- Encourage the development of special aviation opportunities that might permit Westover to become favorably known; such opportunities might include: transport carrier pilot training; use of hangars for large aircraft maintenance, modification or retrofitting; supplemental carrier charters.

- Actively seek commercial and industrial development in complementary areas such as air freight forwarding, air-sensitive industries, local transportation and traveler accommodations.

II The Growth Phase, partially dependent upon Westover's initial success and its ability to complement Windsor Locks' services, should occur between 1980/85 to 1990/95. At this time a local service carrier (e.g., Allegheny, Air New England) should be prepared to provide combination passenger/cargo services with frequencies offered to perhaps six to a dozen or more cities. In addition, international flights might be practical, drawing on the natural Westover market.

III The Ultimate Development Phase, which should be entered some time around 1990 to 1995 should include introduction of a full range of medium- and long-haul services out of Westover by a trunkline carrier. The economy of the region and the growth in traffic levels should then warrant full-scale services from two major facilities in the Hartford/Springfield region. General aviation activity should continue, to the extent possible, with the possibility of a preferential system to accommodate instrumented general aviation aircraft at Westover and less sophisticated equipment at Barnes. The Airport Commission should be in a position to recycle some land from the early years of development into upgraded uses for service industries and headquarters operations.

Restrictions Imposed by Joint Civil/Military Use

Since the Air Force Reserve continues to own and operate the runways, navigational aids and many of the buildings that might eventually be desired for civil aviation use, various negotiations, agreements and compromises are required which limit the flexibility of civil airport operators to use the facility. By the same token, the continued ownership and operation of the retained portion of Westover provides, through federal taxes, a multimillion dollar operations and maintenance budget not otherwise available to the community.

The continued role of the military at Westover is, thus, both a source of benefit and a source of possible restrictions on civilian use. In particular, our research indicated that the Air Force may be disinclined to allow uninstrumented (VFR) aircraft to use Westover under a joint civil/military use agreement. Since the majority of general aviation aircraft are uninstrumented at the present time, a chilling effect on early development of Westover is likely unless a way can be found to open Westover to the full civilian fleet.

Elements of the Development Plan

An area of approximately 85 acres has been designated for reservation as the Regional Aviation Center (see photograph on page 27). The two clusters of three rectangular buildings to the right, known as nosedocks, or aircraft maintenance docks, are fully equipped with utilities and each contains 28,600 square feet of space--two-thirds of an acre under roof, per building. Approximately 1.4 acres of concrete apron space fronts each building. One of these buildings can be used to establish a fixed base operator (FBO) or a general aviation hangar for $0.5 million or less. Other nosedocks can be converted to aviation uses at low cost. When traffic levels warrant, a passenger terminal can be provided, probably on the site of an aircraft shelter, for approximately $2.0 million.

Other terminal area elements of the development plan will require designation of apron space for general aviation and larger aircraft, paved ramp space, automobile parking and fencing. The ultimate terminal and related buildings costs for a limited air carrier use facility (over a 25-year period) will be approximately $10-15 million in 1976 dollars.

On the airfield itself, parallel taxiway construction will eventually be desirable to allow full capacity operation of the runways. Without an improved taxiway system, aircraft are required to use the runway itself for taxiing to and from take-off and landing positions; thus, the full capacity of the runway cannot be achieved. Although this planning consideration is a requirement to be met well into the future, a cost of some $8-9 million may be anticipated. The area of the designated Aviation Center should be adequate to meet civil aviation terminal requirements for the next 25 years at forecast levels of activity.

The financial experience of representative airports throughout the United States is instructive with respect to the ability to operate profitably. A recent sample of airports averaging less than 25,000 passenger enplanements per year showed operating losses on the order of $1 per passenger. This corresponds with the Westover forecast for approximately the first ten years, although Westover should have lower expenses than the average of the sampled airports.

Above the level of about 50,000 annual passengers, most airports are capable of profitable operation. Thus, even if Westover faced some losses during a developmental stage, it should be capable of sustained operating profits thereafter.

Area recommended to be designated for civil aviation use at Westover (viewed from the west).

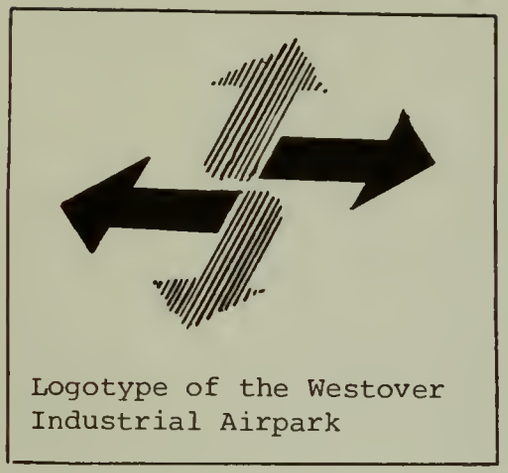
Impact On Industrial Development Program

We have examined the impact that developing an all-purpose aviation center at Westover will have upon industrial development within the Airpark. The examination was made largely because the belief persists that airport industrial parks offer special industrial development opportunities. And to be sure, they do. But the real question is the extent to which development of an aviation center at Westover itself will increase the rate of absorption of land at industrial sites nearby. Our research concludes that modest stimulation of the industrial development program--on the order of 10%--will result. Our reasons are these:

- Much development that occurs around airports does so because the industrial site is otherwise attractive and not solely because the airport is a few miles distant.

- To most manufacturers who have need of "nearby" aviation services, a difference of a few miles, or even blocks, in distance to the airfield is not critical. It may be important to be within fifteen or twenty minutes of an airport, but nearer than that may not much matter. Such potential tenants as these will have a wide range of plant-location choices within the immediate Springfield-Chicopee-Holyoke area. Moreover, they are likely to choose their plant locations for reasons other than having "direct taxi access" or "plant-to-plane" or "warehouse-to-plane" access.

- Those industrial operations which do require direct taxiway access are very specialized and few in number. One example of such operation is Westinghouse's "Air-On" radar installation facility at Baltimore's Friendship Airport, where radar equipment is installed and maintained in aircraft. This enterprise is part of the aircraft manufacturing industry, some part of which might be a potential tenant at Westover. Success in attracting such tenants is so dependent upon good fortune and keen development management that it does not lend itself to statistical projection.



Logotype of the Westover Industrial Airpark

- Since fuel costs began increasing, industrial developers have noted a dramatic rise in the demand for rail availability. And the Urban Land Institute has concluded that "maximum flexibility" of access to all modes to accommodate changing transportation costs will be an important feature of future industrial development.

Those firms in high-growth industries which have the strongest locational preference for airport proximity also have slightly larger land requirements than the rest of the high-growth group. For this reason, attracting such firms will speed up the rate of land absorption at Westover by perhaps 10%. The industries in which such firms may be found are listed below.

HIGH GROWTH INDUSTRIES INDICATING STRONG LOCATIONAL PREFERENCE FOR AIRPORT PROXIMITY
(With Value of Shipments in Excess of $500 Million)

Paper mill products
Pressure sensitive tape and labels
Advertising, printing, lithographic
Other commercial lithographic printing
Misc. noncellulosic synthetic organic fibers
Synthetic organic medicinal chemicals
Perfumes, toilet water and colognes
Aluminum plate and sheet
Valves for power transfer
Power cranes, draglines, etc.
Air and gas compressors
Ball bearings
Other general industrial machinery
Test equipment: electrical
Misc. small household electrical appliances
Household and automobile radios
C, I, & M. electrical communications equipment
Transistors
Aeronautical and navigational instruments

Conclusions

1. There is no physical impediment to the development of a regional aviation center at Westover.

2. There is a strong enough market to support the creation of an aviation center at Westover.

3. Coordinated development of airport facilities and services in tandem with an industrial development program at Westover will be in the interest of the local communities and the Commonwealth.

4. A step-by-step development plan offers the best opportunity to capture the market at low risk.

5. Commuter carrier operations and cargo transportation should be developed early.

6. Professional and business segments of general aviation should be developed in conjunction with for-hire air services.

7. Aviation-related commercial developments should be pursued in parallel with commuter, cargo, and other commercial aviation developments.

8. Certificated carrier service--both domestic and international--should be sought for ultimate development during the last decade of the century.

9. The present level of military activity poses no burden to the development of civil aviation.

10. Westover has greater potential for development than any other airport in the region, and development efforts should concentrate on realizing that potential.

Recommendations

1. The WMDC should undertake to establish a "Westover Metropolitan Airport Commission".

2. The commission should seek adequate staffing and budget in order to make the airport operational for civil use at an early date and to engage in medium-term (5-year) planning as well.

3. Qualified personnel familiar with the airport and the background of the previous planning efforts of the WMDC should be selected to serve on the Airport Commission at both Board and Staff levels.

4. Negotiations should be undertaken early to contract with a first-rate fixed base operator (FBO) to serve the needs of local and itinerant aircraft seeking to use Westover.

5. A joint use agreement should be negotiated with the Defense Department at an early date.

6. The Massachusetts Aeronautics Commission should undertake to minimize new capital expenditures at airports within the Westover region if similar facilities are available at Westover.

7. The Commonwealth should coordinate with MAC, FAA, the New England Regional Commission, WMDC and other agencies by taking a regional approach to the utilization of airports such as Windsor Locks, Westfield, and Westover.

8. The Westover Metropolitan Airport Commission should closely coordinate its development plans with municipal governments, WMDC and the Lower Pioneer Valley Regional Planning Commission.

9. The Airport Commission should undertake to establish local zoning ordinances to protect Westover runways and approaches from incompatible land use.

10. A phased development plan should be pursued by the Airport Commission to proceed with aviation development in parallel with industrial development.

Notes

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